

WHAT IS CLAIMED IS:

1. A channel plate having a porous element,
wherein the porous element includes an aluminum
compound.

5

2. A channel plate, comprising: a substrate; a
first electrode placed on the top face of the
substrate; and a second electrode placed on the bottom
face of the substrate, wherein:

10 said substrate is a porous element having a
plurality of pores extending therethrough;

wherein the porous element is formed with a
compound including aluminum and the porous element has
an electron multiplier on a wall surface of the pore.

15

3. The channel plate according to claim 2,
wherein said electron multiplier emits secondary
electrons due to collision of the electrons with said
electron multiplier.

20

4. The channel plate according to claim 2,
wherein said electron multiplier has oxide grains of
which secondary electron emission coefficient is larger
than one.

25

5. The channel plate according to claim 2,
wherein said porous element has aluminum oxide as its

main ingredient.

6. The channel plate according to claim 2,
wherein said electron multiplier is formed by coating
5 the wall surface of the pore of said porous element.

7. An image intensifier having the channel plate
according to claim 2.

10 8. A photomultiplier having the channel plate
according to claim 2.

9. A method for manufacturing a channel plate
comprising the steps of: anodizing a substrate of
15 aluminum or a substrate of which main ingredient is
aluminum, to form a porous element having a plurality
of pores extending through the substrate;

forming electron multipliers on wall surfaces of
the pores; and

20 forming electrodes on the top and bottom faces of
the porous element respectively.

10. The method for manufacturing a channel plate
according to claim 9, wherein said step of forming the
25 electron multipliers is a step of coating the wall
surfaces of the pores of said porous element with a
coating layer including a material of which secondary

electron emission coefficient is larger than that of
the material forming said porous element.

11. The method for manufacturing a channel plate
5 according to claim 10, wherein said coating layer
comprises a material of which secondary electron
emission coefficient is larger than 1.

12. The method for manufacturing a channel plate
10 according to claim 11, wherein said coating layer
includes oxide grains.

13. The method for manufacturing a channel plate
according to claim 10, wherein said coating layer
15 includes oxide grains.

14. The method for manufacturing a channel plate
according to claim 9, wherein said aluminum or the
substrate of which main ingredient is aluminum is an
20 aluminum film disposed on the electrode to be anodized.